<u>REMARKS</u>

Claims 1-24 and 26-31 are pending. All stand rejected on new grounds. The applicants request further examination and consideration in view of the remarks set forth below.

<u>Rejections under 35 U.S.C. § 102:</u>

Claims 1-5, 10-16, 21-24, 26 and 27 are rejected as being anticipated by U.S. Patent No. 6,086,618 to Al-Hilali et al. (hereinafter "Al-Hilali").

The applicants respectfully traverse the rejection. Referring to claim 1, it recites as follows:

1. (previously presented) A method of assigning resources for a computer system design comprising:

receiving desired levels of performance parameters for a computer system design from a user via a user interface to a computer system, the design including assignments of system resources to applications;

modifying the design in response to said desired levels including modifying the assignments of the system resources;

predicting levels of performance parameters for the modified design; and

displaying for the user an indication of the predicted levels of performance parameters for the modified design via the user interface.

Therefore, applicants' claim 1 is directed toward a method of assigning resources for a computer system design. The recited steps require the use of a user-interface for receiving desired levels of performance parameters for a computer system design from a user. The design is then modified in response to the desired levels received from the user. The design for the computer system includes assignments of resources to applications. Modifying the design in response to the desired levels includes modifying the assignments of system resources. Levels of performance parameters for the modified design are then predicted. An indication of the predicted levels of performance parameters for the modified design is then displayed for the user via the user interface.

In order for a claim to be anticipated under 35 U.S.C. § 102, the identical invention must be shown in a single prior art reference in as complete detail as is contained in the claim and the elements of the claim must be arranged in the prior art reference as required by the claim. Manual of Patent Examining Procedure at Section 2131 (Aug. 2006) (citations omitted). The applicants respectfully submit that the Al-Hilali reference does not anticipate the applicants' claim 1.

Al-Hilali is directed toward estimating total resource usage of a server application using a model. Al-Hilali at col. 3, line 65 to col. 4, line 3. More particularly, Al-Hilali teaches a methodology for making a model of resource usage and then using the model to estimate resource usage. Al-Hilali at col. 4, line 46 to col. 5, line 21; and col. 9, lines 31-45. The model is made by first identifying and defining "transactions" that occur at the server application. Al-Hilali at col. 4, lines 56-58 and col. 9, line 46 to col. 10, line 20. Next, the "cost" of performing the transactions in terms of the relevant system resources is determined taking resource usage measurements for each transaction and each resource used. Al-Hilali at col. 10, lines 21-34. Al-Hilali explains that this can be done by creating a transaction load across the network and monitoring different resource usage, such as CPU usage, disk access time, memory usage, etc. Al-Hilali at col. 4, line 65, to col. 5, line 1; and col. 11, line 44, to col. 12, line 39. From the resource usage information and measurements, cost equations for each system resource are constructed for modeling the server application resource requirements. Al-Hilali at col. 5, lines 5-7; and col. 10, lines 35-48.

Certain user behavior information and anticipated numbers of users are collected into a user profile for a hypothetical configuration. Al-Hilali at col. 10, line 61, to col. 11, line 1. The user profile may contain the number of anticipated users, individual user usage rates of various functions available to the user through the user interface, parameters indicating length of data objects manipulated by the user, etc. Al-Hilali at col. 11, lines 1-7. The user profile is then used in conjunction with the system resource cost equations in order to determine the amount of resources needed for a particular server application in a particular situation or configuration. Al-Hilali at col. 10, lines 61-66. Thus, given the set of system resource cost equations and the input for those equations in terms of transaction rates based upon a user profile, the total system resource usage can be computed. Al-Hilali at col. 11, lines 15-18.

Al-Hilali describes this methodology in the context of estimating resource usage for an email application. See Al-Hilali at col. 6, lines 37-44; col. 12, line 41 to col. 19, line 7 and figures 6 and 7.

Applicants respectfully submit that Al-Hilali does not teach all of the limitations of claim 1. Particularly, Al-Hilali does not teach "receiving desired levels of performance parameters for a computer system design from a user via a user interface to a computer system." The office action indicates that Al-Hilali teaches this step of claim 1 at figure 2 and col. 5, lines 55-67; col. 6, lines 1-28; col. 3, line 16; figures 1-7; and col. 10, lines 49-60. The applicants respectfully disagree. Figure 2 of Al-Hilali merely shows a logical diagram of a user interacting through a user interface with a client application, such as an email application. Al-Hilali explains that figure 2 shows the operating environment of a server application. See Al-Hilali at col. 8, lines 18-26. Thus, figure 2 shows an environment in which a user may send and receive email to and from the email server. And, at col. 5, lines 55-67, and col. 6, lines 1-28, Al-Hilali gives brief descriptions of the several figures of Al-Hilali, including figure 2. However, none of the figures or the brief descriptions teaches "receiving desired levels of performance parameters for a computer system design from a user via a user interface to a computer system" as is required by applicants' claim 1. Further, at col. 3, line 16, which is "background" discussion, Al-Hilali discusses a prior technique of "benchmarking" and a way of potentially increasing the accuracy of benchmarking by gathering data from three or four hardware configurations that provide suitable performance. Finally, at col. 10, lines 49-60, Al-Hilali discusses that the system resource usage model is essentially the aggregate of system resource cost equations. Therefore, it can be seen that these passages of Al-Hilali do not teach the limitation of claim 1 which is supposedly taught by them. Particularly, while Al-Hilali discusses user interaction, Al-Hilali does not teach receiving desired levels of performance parameters for a computer system design from a user, as is required by claim 1. For at least this reason, claim 1 is allowable over Al-Hilali.

Al-Hilali also does not teach "modifying the design in response to said desired levels including modifying the assignments of the system resources." The office action indicates that this step is taught by Al-Hilali Table 3 and col. 16, lines 13-29. The applicants respectfully disagree. Rather, Table 3 of Al-Hilali merely shows CPU resource usage measurements for logon and quit transactions. And, at col. 16, lines

13-29, Al-Hilali discusses the particulars of Table 3 and also suggests that other loads and measurements could be taken. Therefore, it can be seen that these passages of Al-Hilali are unrelated to the limitation of claim 1 which is supposedly taught by them. In fact, nowhere does Al-Hilali teach modifying a design in response to desired levels of performance parameters, nor does Al-Hilali teach that such modifying includes modifying the assignments of the system resources. This is another reason why claim 1 is allowable.

Further, Al-Hilali does not teach or suggest "predicting levels of performance parameters for the modified design." The office action indicates that this step of claim 1 is taught by Al-Hilali at figure 4, reference 110; col. 4, lines 38-45; and col. 11, lines 23-35. Regarding col. 11, lines 23-35, the office action states that "anticipated demand" is equivalent to "predicted performance." The applicants respectfully disagree. All of these portions of Al-Hilali reference the final step of the Al-Hilali methodology in which the model is used to estimate resource usage by the server application. However, resource usage is not a measure of performance. Rather, resource usage is a measure of the hardware requirements of the server application. See Al-Hilali at col. 18, lines 5-9. Nowhere does Al-Hilali teach predicting performance of a computer system design, nor does Al-Hilali teach predicting performance of a computer system design that has been modified. This is yet another reason why claim 1 is allowable over Hilali.

Finally, applicants' claim 1 recites "displaying for the user an indication of the predicted levels of performance parameters for the modified design via the user interface." The office action indicates that Al-Hilali teaches this step of claim 1 at figure 1, reference 47; col. 10, lines 49-60 and figure 7, reference 158. The applicants respectfully disagree. Reference 47 of figure 1 is a conventional computer system display device (i.e. a "monitor") though no functions of the device are described. Reference 158 of figure 7 is a "resource usage monitor." While this element is also referred to by Al-Hilali as a "monitor," it is used to measure resource usage while the mail service server application is exposed to a load. Col. 10, lines 49-60, of Al-Hilali discusses using the cost equations to estimate resource usage by the server application. Thus, while Al-Hilali discloses a conventional computer display monitor, Al-Hilali does not teach using the monitor as recited by claim 1. Particularly, Al-Hilali does not teach "displaying for the user an indication of the predicted levels of performance parameters for the modified design via the user interface." This is clear

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because, as explained above, Al-Hilali does teach predicting performance of a computer system design. Therefore, Al-Hilali also does not teach displaying an indication of the predicted levels of performance parameters. This is another reason why applicants' claim 1 is allowable.

Dependent claims 2-5 are allowable at least because each depends from an allowable base claim 1. Moreover, these dependent claims recite limitations not taught by Al-Hilali. For example, claims 4 and 5 recite limitations related to utility functions whereas Al-Hilali does not teach the use of utility functions.

Independent claim 10 recites as follows:

10. (previously presented) A method of assigning resources for a computer system design comprising:

> receiving desired levels of performance parameters for a computer system design from a user via a user interface to a computer system;

> developing the design including assignments of system resources to applications;

> predicting levels of performance parameters for the design;

> comparing the predicted levels of performance parameters to the desired levels of performance parameters;

> modifying the design including modifying the assignments of the system resources when the predicted levels are lower than the desired levels, said modifying being performed by the computer system; and

> displaying for the user results of the modifying via the user interface.

Therefore, applicants' claim 10 is directed toward a method of assigning resources for a computer system design. The recited steps require the use of a user-interface for receiving desired levels of performance parameters for a computer system design from a user. The design is then developed that includes assignments of resources to applications. Levels of performance parameters for the design are predicted and compared to the desired levels of performance parameters. If the predicted levels are lower than the desired levels, the design is modified, including

modifying the assignments of the system resources. The modifying is performed by the computer system. Results of the modifying are displayed for the user via the user interface.

The applicants respectfully submit that Al-Hilali does not teach all of the limitations of claim 10. The office action indicates that Al-Hilali teaches the step of "receiving desired levels of performance parameters for a computer system design from a user via a user interface to a computer system" at col. 3, line 16; figures 1-7; col. 10, lines 49-60; and col. 11, lines 23-35. The applicants respectfully disagree. At col. 3, line 16, which is "background" discussion, Al-Hilali discusses a prior technique of "benchmarking" and a way of potentially increasing the accuracy of benchmarking by gathering data from three or four hardware configurations that provide suitable performance. Figures 1-7 show the methodology of Al-Hilali in which a model is used to estimate resource usage by the server application. At col. 10, lines 49-60, Al-Hilali discusses that the system resource usage model is essentially the aggregate of system resource cost equations. Finally, at col. 11, lines 23-35, Al-Hilali references the final step of the methodology in which the model is used to estimate resource usage by the server application. Therefore, none of these passages of Al-Hilali teach "receiving desired levels of performance parameters for a computer system design from a user via a user interface to a computer system." For at least this reason, claim 10 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches the step of "developing the design including assignments of system resources to applications" at col. 9, lines 24-30. The applicants respectfully disagree. This passage of Al-Hilali merely discusses using a load generator to exercise the server application in order to take measurements of resource usage. This is unrelated to the claimed step of developing a design. This is another reason why claim 10 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches the step of "predicting levels of performance parameters for the design" at Table 3. The applicants respectfully disagree. As explained above Table 3 of Al-Hilali merely shows CPU resource usage measurements for logon and quit transactions. While Al-Hilali teaches estimating resource usage, it does not teach predicting levels of performance parameters. This is yet another reason why claim 10 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches the step of "comparing the predicted levels of performance parameters to the desired levels of performance

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parameters" at Table 3 and col. 3, line 16. The applicants respectfully disagree. These passages of Al-Hilali are discussed above and do not teach any step of comparing. In fact, nowhere does Al-Hilali teach comparing predicted levels of performance parameters to desired levels. This is another reason why claim 10 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches the step of "modifying the design including modifying the assignments of the system resources when the predicted levels are lower than the desired levels, said modifying being performed by the computer system" at Table 3; col. 15, lines 23-67; col. 16, lines 13-40; Table 4; Table 5; col. 16, lines 66-67; col. 17; col. 18; and col. 19, lines 1-6. The applicants respectfully disagree. As discussed above, Table 3 of Al-Hilali merely shows CPU resource usage measurements for logon and quit transactions. At col. 15, lines 23-67, Al-Hilali discusses using counters to measure resource usage for various transactions, such as the logon and quit transaction. At col. 16, line 66, to col. 19, line 6, Al-Hilali discusses particular cost equations for an email server application. Therefore, it can be seen that none of these passages of Al-Hilali teach the limitations of claim 10 which are supposedly taught. This is another reason why claim 10 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches the step of "displaying for the user results of the modifying via the user interface" at figure 1, reference 47; col. 8, lines 22-26; col. 10, lines 49-60; figure 7, reference 158; col. 5, lines 55-67 and col. 6, lines 1-28. The applicants respectfully disagree. As explained above in connection with claim 1, reference 47 of figure 1 of Al-Hilali is a computer system display device (i.e. a "monitor") though no functions of the device are described. Reference 158 of figure 7 is a "resource usage monitor." While this is also referred to by Al-Hilali as a "monitor" it is used to measure the resource usage while the mail service server application is exposed to a load. At col. 8, lines 22-26, Al-Hilali discusses figure 2 which shows a logical diagram of a user interacting through a user interface with a client application, such as an email application. Col. 10, lines 49-60 of Al-Hilali discusses using the cost equations to estimate resource usage by the server application. Finally, at col. 5, line 55, to col. 6, line 28, Al-Hilali gives brief descriptions of the several figures of Al-Hilali. However, none of the figures or the brief descriptions teaches the step of "displaying for the user results of the modifying via the user interface" as is required by applicants' claim 10. In fact, nowhere does

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Al-Hilali teach this step. This is clear because, as explained above, Al-Hilali does teach the step of modifying a computer system design. Therefore, Al-Hilali also does not teach displaying results of such a step of modifying. This is another reason why applicants' claim 10 is allowable.

Dependent claims 11-16 and 21-22 are allowable at least because each depends from an allowable base claim 10. Moreover, these dependent claims recite limitations not taught by Al-Hilali. For example, claims 15 and 16 recite limitations related to utility functions whereas Al-Hilali does not teach the use of utility functions.

Independent claim 23 recites as follows:

23. (previously presented) An apparatus for assigning resources for a computer system design, comprising a computer system programmed to operate in a first program loop in which a user specifies desired levels of performance parameters of the design via a user interface and a second program loop in which: performance parameter levels are predicted for the design; the predicted performance parameters are compared to the desired levels of performance parameters; the design is modified, including modifying assignments of system resources to applications, in response to the comparison and results of the modifying are displayed for the user via the user interface.

Therefore, applicants' claim 23 is directed toward an apparatus for assigning resources for a computer system design, comprising a computer system programmed to operate in a first program loop and a second program loop. In the first program loop, a user specifies desired levels of performance parameters of the design via a user interface. In the second program loop, levels of performance parameters for the design are predicted and compared to the desired levels of performance parameters. The design is modified in response to the comparison, including modifying the assignments of the system resources. Results of the modifying are displayed for the user via the user interface.

The office action indicates that Al-Hilali teaches "a first program loop in which a user specifies desired levels of performance parameters of the design via a user interface" at col. 6, lines 50-67, col. 3, line 16; figures 4 and 5; col. 3, lines 34-35; col. 4, lines 37-45; col. 5, lines 55-67 and col. 6, lines 1-28. The applicants

respectfully disagree. At col. 6, lines 50-67, Al-Hilali discusses elements of the general-purpose computer system of figure 1. However, this passage from Al-Hilali does not teach that a user specifies desired levels of performance parameters of a computer system design via a user interface. And, at col. 3, line 16, which is "background" discussion, Al-Hilali discusses a prior technique of "benchmarking" and a way of potentially increasing the accuracy of benchmarking by gathering data from three or four hardware configurations that provide suitable performance. Figure 4 shows a flow chart of steps of the methodology of Al-Hilali. Figure 5 of Al-Hilali shows a flow chart of steps of measuring resource usage for each transaction. Col. 3, lines 34-35, of Al-Hilali, which is "background" discussion, Al-Hilali discusses using tests on multiple hardware configurations for "benchmarking." At col. 4, lines 37-45, Al-Hilali discusses using the cost equations to create a model which can then be used to estimate resource requirements. Finally, at col. 5, line 55, to col. 6, line 28, Al-Hilali gives brief descriptions of the several figures of Al-Hilali. However, none of the figures or the brief descriptions teaches the step of "a first program loop in which a user specifies desired levels of performance parameters of the design via a user interface" as is required by applicants' claim 23. Therefore, it can be seen that these passages of Al-Hilali are unrelated to the limitations of claim 23 which are supposedly taught. For at least this reason, claim 23 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches "performance parameter levels are predicted for the design" at Table 3. The applicants respectfully disagree. As explained above, Table 3 of Al-Hilali merely shows CPU resource usage measurements for logon and quit transactions. Thus, while Al-Hilali teaches estimating resource usage, Al-Hilali does not teach predicting performance parameter levels. This is another reason why claim 23 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches "the predicted performance parameters are compared to the desired levels of performance parameters" at col. 3, line 16. The applicants respectfully disagree. As explained above, this passage of Al-Hilali is contained in the background section of Al-Hilali and discusses a prior art technique of "benchmarking." This passage of Al-Hilali does not teach any comparing. In fact, nowhere does Al-Hilali teach that predicted performance parameters are compared to desired levels. This is yet another reason why claim 23 is allowable over Al-Hilali.

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The office action indicates that Al-Hilali teaches "the design is modified, including modifying assignments of system resources to applications, in response to the comparison" at col. 6, lines 11-19; col. 5, lines 22-30; col. 7, lines 43-53; col. 8, lines 22-26; col. 9, lines 13-45; col. 10, lines 22-34; col. 10, lines 48-60; col. 11, lines 8-61; col. 14, lines 46-54; col. 15, lines 23-47; and col. 16, lines 13-20. The applicants respectfully disagree. At col. 6, lines 11-19, Al-Hilali briefly describes figure 6 which shows a logical diagram of a user interacting with an email server. At col. 5, lines 22-30, Al-Hilali discusses the user profile. At col. 7, lines 43-53, Al-Hilali discusses a keyboard and a "pointing device." At col. 8, lines 22-26, Al-Hilali discusses that figure 2 of Al-Hilali shows a logical diagram of a user interacting through a user interface with a client application, such as an email application. At col. 9, lines 13-45, Al-Hilali discusses measuring resource usage and briefly describes the oval methodology of Al-Hilali. At col. 10, lines 22-34, Al-Hilali discusses measuring resource usage. At col. 11, lines 8-61, Al-Hilali discusses using the user profile and the cost equations to estimate total resource usage. At col. 14, lines 46-54, Al-Hilali discusses contents of the user profile. At col. 15, lines 23-47, Al-Hilali discusses measuring resource usage in a mail server application. Finally, at col. 16, lines 13-20, Al-Hilali discusses Table 3 of Al-Hilali which merely shows CPU resource usage measurements for logon and quit transactions and also suggests that other loads and measurements could be taken. Therefore, it can be seen that these numerous passages of Al-Hilali are unrelated to the limitations of claim 23 in which the design is modified, which includes modifying assignments of system resources to applications, in response to the comparison of the predicted performance parameters to the desired levels. This is another reason why claim 23 is allowable over Al-Hilali.

The office action indicates that Al-Hilali teaches that "results of the modifying are displayed for the user via the user interface" at figure 1, reference 47; col. 8, lines 22-26; col. 10, lines 46-60; figure 7, reference 158; col. 5, lines 55-67 and col. 6, lines 1-28. The applicants respectfully disagree. As explained above 1, reference 47 of figure 1 of Al-Hilali is a computer system display device (i.e. a "monitor") though no functions of the device are described. Reference 158 of figure 7 is a "resource usage monitor." While this is also referred to by Al-Hilali as a "monitor," it is used to measure the resource usage while the mail service server application is exposed to a load. At col. 8, lines 22-26, Al-Hilali discusses figure 2 which shows a logical diagram of a user interacting through a user interface with a client application, such as

an email application. Col. 10, lines 49-60 of Al-Hilali discusses using the cost equations to estimate resource usage by the server application. Finally, at col. 5, line 55, to col. 6, line 28, Al-Hilali gives brief descriptions of the several figures of Al-Hilali. However, none of the figures or the brief descriptions teaches that "results of the modifying are displayed for the user via the user interface" as is required by applicants' claim 23. In fact, nowhere does Al-Hilali teach this step. This is clear because, as explained above, Al-Hilali does teach that a computer system design is modified. Therefore, Al-Hilali also does not teach displaying results of such modifying. This is another reason why claim 23 is allowable over Al-Hilali.

Dependent claims 24, 26 and 27 are allowable at least because each depends from an allowable base claim 23. Moreover, these dependent claims recite limitations not taught by Al-Hilali. For example, claims 26 and 27 recite limitations related to utility functions whereas Al-Hilali does not teach the use of utility functions.
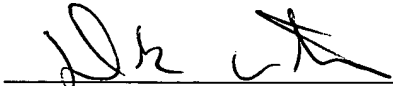
Rejections under 35 U.S.C. § 103:

Claims 6-9, 17-20 and 28-31 are rejected as being obvious in view of Al-Hilali in view of U.S. Patent No. 6,487,562 to Mason, Jr. et al. (hereinafter "Mason"). Claims 6-9, 17-20 and 28-31 are dependent claims which depend from an allowable base claim 1, 10 or 23. For at least this reason, claims 6-9, 17-20 and 28-31 are allowable.

Conclusion:

In view of the above, the applicants submit that all of the pending claims are now allowable. Allowance at an early date would be greatly appreciated. Should any outstanding issues remain, the examiner is encouraged to contact the undersigned at (408) 293-9000 so that any such issues can be expeditiously resolved.

Respectfully Submitted,

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